

Charting the Shifting Landscape of E-commerce Live Streaming: Insights from a 2019–2024 Bibliometric Study

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DOI Link: <http://dx.doi.org/10.6007/IJARBSS/v15-i10/26594>

Published Date: 07 October 2025

Abstract

This study presents a bibliometric analysis of e-commerce live streaming (ECLS) research from 2019 to 2024 based on data retrieved from the Scopus database. A total of 277 publications were analyzed using VOSviewer to examine publication trends, disciplinary distribution, contributing countries and institutions, leading journals and authors, citation impact, and keyword co-occurrence patterns. The results reveal a rapid increase in scholarly output, with China emerging as the dominant contributor. Research in this field is highly interdisciplinary, spanning computer science, business, and social sciences. Keyword cluster analysis identifies core themes such as purchase intention, consumer engagement, trust, interactivity, and the application of S-O-R theory. Recent years show a shift toward emerging topics including virtual influencers, cross-border e-commerce, and platform-specific dynamics (e.g., TikTok, metaverse). This study offers a comprehensive overview of the knowledge structure and evolving research landscape of ECLS, providing insights and directions for future scholarly exploration.

Keywords: E-Commerce Live Streaming, Bibliometric Analysis, Vosviewer, Keyword Co-Occurrence

Introduction

The advent of live streaming in e-commerce represents a transformative shift in the way businesses engage with consumers, offering a dynamic and interactive platform that merges real-time video broadcasting with online shopping. This innovative approach, often referred to as e-commerce live streaming (ECLS), has rapidly gained traction, particularly in markets such as China, where it has significantly reshaped the retail landscape (Zhang et al., 2021). The integration of live streaming into e-commerce platforms allows for real-time interaction

between sellers and consumers, enhancing the shopping experience by providing immediate product demonstrations, answering consumer queries, and fostering a sense of community and trust (Widodo, & Napitupulu, 2023; Zheng, Sindihebura, Pu, Li, & Chong, 2023). This interactive format not only stimulates consumer engagement but also drives purchase intentions and sales, making it a powerful tool for modern e-commerce strategies (Widodo & Napitupulu, 2023; Huang, 2024).

Research on ECLS has expanded considerably in recent years, reflecting its growing importance in the digital marketplace. Studies have highlighted several key factors that contribute to the success of ECLS, including consumer engagement, trust, and purchase intention (Junghwa & Yoon, 2024; Widodo & Napitupulu, 2023). The interactive nature of live streaming, combined with elements such as visibility, authenticity, and entertainment, has been shown to significantly enhance consumer satisfaction and drive sales (Huang, 2024). Moreover, the phenomenon of live streaming has been linked to increased brand awareness and customer loyalty, further underscoring its potential as a marketing tool (Widodo & Napitupulu, 2023).

Despite its burgeoning popularity, the academic exploration of ECLS is still in its nascent stages, with many studies focusing on specific aspects rather than providing a comprehensive overview (Huang et al., 2024). Recent bibliometric analyses have mapped the knowledge framework of ECLS, identifying key research trends and gaps in the literature (Huang et al., 2024; Wu & Xu, 2024). These analyses reveal that while there is a strong collaboration among researchers and institutions, there is a need for more interdisciplinary studies to fully understand the multifaceted nature of ECLS (Huang et al., 2024). Additionally, empirical studies have begun to quantify the impact of live streaming on sales, demonstrating both immediate and long-term effects on consumer behavior (Chen et al., 2018; Zheng et al., 2023).

The significance of ECLS lies in its ability to transform traditional e-commerce by creating a more engaging and personalized shopping experience. The real-time interaction between streamers and consumers not only enhances the visibility and appeal of products but also builds a sense of trust and community that is often lacking in conventional online shopping (Huang, 2024; Widodo & Napitupulu, 2023). This shift towards a more interactive and immersive shopping experience is particularly appealing to younger consumers, such as Generation Z, who value authenticity and engagement in their purchasing decisions (Willianto et al., 2024).

Future research in this field should aim to address the existing gaps by exploring the long-term impacts of ECLS on consumer behavior and sales, as well as the potential for integrating advanced technologies such as artificial intelligence to further personalize the shopping experience (Li et al., 2025). Additionally, there is a need to investigate the strategic implications of live streaming for different types of products and markets, as well as the role of influencers and community dynamics in shaping consumer preferences (Chen et al., 2023). By building on the current knowledge base and addressing these critical areas, researchers can provide valuable insights that will help businesses leverage the full potential of ECLS in the evolving digital landscape.

ECLS represents a significant evolution in e-commerce, offering a unique blend of real-time interaction, entertainment, and social engagement that enhances the consumer shopping experience. As research in this field continues to grow, it will provide deeper insights into the mechanisms driving consumer behavior and the strategic opportunities for businesses to capitalize on this innovative platform.

In conclusion, despite the growing scholarly attention to live streaming commerce, there remains a lack of systematic bibliometric analysis that maps its intellectual structure and developmental trajectory over time. This study is motivated by the need to capture how research on ECLS has evolved between 2019 and 2024, identifying emerging themes, key contributors, and potential future directions. By visualizing the knowledge landscape, this paper contributes to a deeper understanding of how academic discourse surrounding live streaming commerce has expanded and diversified, offering valuable insights for both researchers and practitioners interested in digital consumer behavior and marketing innovation.

Literature Review

ECLS has emerged as a transformative force in the retail industry, combining live video broadcasting with online shopping to create an interactive and immersive consumer experience. This innovative approach has been shown to significantly drive sales and enhance consumer engagement. For instance, studies have demonstrated that live streaming can increase sales volume and review participation rates, as well as positively impact the sales of non-live-demonstration products, indicating its effectiveness as a relationship marketing tool (Hu & Min, 2020). Additionally, live streaming features such as interactivity, authenticity, and preferential treatment have been found to significantly boost consumer satisfaction and purchase intentions (Huang, 2024). The interactive nature of live streaming allows consumers to gain a more intuitive understanding of products, thereby stimulating purchase intentions and increasing traffic for businesses (Huang, 2024; Zhou & Tian, 2022).

The impact of live streaming on consumer behavior is multifaceted, influencing factors such as impulse buying, trust, and perceived value. Research indicates that external factors like anchor characteristics, online comments, logistics service quality, and promotional incentives can drive impulsive buying behavior through the mediation of perceived trust and value (Simanjuntak et al., 2023). Moreover, live streaming can reduce consumers' perceived uncertainty and enhance their overall perceived value, which in turn increases purchase intentions, especially in cross-border e-commerce contexts (Guo et al., 2021). The quality of logistics services, in particular, plays a crucial role in building consumer trust and satisfaction, further encouraging transactions through live streaming platforms (Simanjuntak et al., 2023). Additionally, the social presence and real-time interaction provided by live streaming platforms significantly affect the flow state of consumers, which can lead to impulsive buying behavior (Chung et al., 2025).

Despite its benefits, ECLS also faces challenges such as false publicity and product quality issues, which can affect consumer trust and purchase (Fang & Yao, 2024). However, the overall positive impact of live streaming on e-commerce is evident, with studies highlighting its ability to enhance consumer engagement, trust, and purchase intentions (Widodo & Napitupulu, 2023; Willianto et al., 2024). The integration of live streaming into e-commerce

platforms has not only improved sales performance but also fostered customer loyalty and brand awareness (Widodo & Napitupulu, 2023; Wimolsophonkitti & Naipinit, 2024). As the ECLS market continues to expand, it is essential for businesses to understand the complex dynamics of value creation and consumer engagement to fully leverage this powerful marketing tool (Cao et al., 2022; Lin et al., 2024).

In summary, this study takes the literature on ECLS published between 2019 and 2024 in the Scopus database as its data source and research subject. Using bibliometric methods and the visualization tool VOSviewer, it systematically analyzes the developmental dynamics of the field over the past five years. The analysis covers publication trends, disciplinary distributions, contributions by countries and institutions, core journals, author collaboration networks, highly cited articles, keyword co-occurrence relationships, and their annual evolution. By constructing keyword co-occurrence networks and performing cluster analysis, this study aims to reveal the knowledge structure and thematic evolution of ECLS research, providing valuable references for future theoretical exploration and practical applications. This paper seeks to answer the following four core research questions:

- RQ1: What are the publication trends and disciplinary distributions of ECLS research over the past five years?
- RQ2: Which countries, institutions, and journals have been most active and influential in the development of ECLS research?
- RQ3: Who are the leading authors and what is the structure of research collaboration in this field?
- RQ4: What are the core research themes and how have they evolved over time in the ECLS domain?

Methodology

Bibliometric methods are widely used for evaluating research performance and trends across various disciplines. These methods, which include citation analysis and impact factors, are essential for assessing academic output and the influence of research (Anninos, 2014; Puche, 2011; Sillet, 2013). However, their application can be challenging in fields like Humanities, Arts, and Social Sciences (HASS) due to differing research practices (Ochsner, 2020). Despite these challenges, bibliometrics has become integral in ranking institutions and understanding research trends (Curley & Cady, 2018; Ellegaard & Wallin, 2015).

This study adopted a systematic screening process to ensure the scientific rigor and consistency of the search results. First, a search was conducted in the Scopus database using the following keywords: TITLE-ABS-KEY ("e-commerce live streaming" OR "live commerce" OR "live stream shopping" OR "livestream shopping" OR "live streaming marketing" OR "live broadcast shopping"), initially retrieving a total of 361 documents. The time frame was then limited to 2019–2024, reducing the number to 302. Further screening was conducted to retain only research articles written in English or Chinese, excluding review articles, books, book chapters, editorials, and letters. In the end, 277 articles were included as the data foundation for the bibliometric analysis.

Table 1

The selection criterion is searching

Scopus	TITLE-ABS-KEY ("e-commerce live streaming" OR "live commerce" OR "live stream shopping" OR "live stream shopping" OR "live streaming marketing" OR "live broadcast shopping") AND PUBYEAR > 2018 AND PUBYEAR < 2025 AND (EXCLUDE (DOCTYPE , "re") OR EXCLUDE (DOCTYPE , "cr") OR EXCLUDE (DOCTYPE , "ch") OR EXCLUDE (DOCTYPE , "bk") OR EXCLUDE (DOCTYPE , "ed") OR EXCLUDE (DOCTYPE , "le")) AND (EXCLUDE (LANGUAGE , "Korean") OR EXCLUDE (LANGUAGE , "Japanese"))
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Table 2

The selection criterion is searching

Criterion	Inclusion	Exclusion
Language	English, Chinese	Non-English, Non-Chinese
Time line	2019 – 2024	< 2025
Literature type	Journal (Article), Conference	Book, Review, Editorial
Publication Stage	Final	In Press

Findings

Research Output and Source Distribution

Annual Publication Trends

The field of ECLS began to attract academic attention in 2019, with only three publications indexed in Scopus that year. Although limited in number, these early studies laid the groundwork for future exploration. In the following years, the number of publications gradually increased—rising to 12 in 2020 and 21 in 2021. This slow yet steady growth reflects the nascent stage of the research field, coinciding with the early adoption of ECLS technologies and the global shift toward digital retail environments during the COVID-19 pandemic.

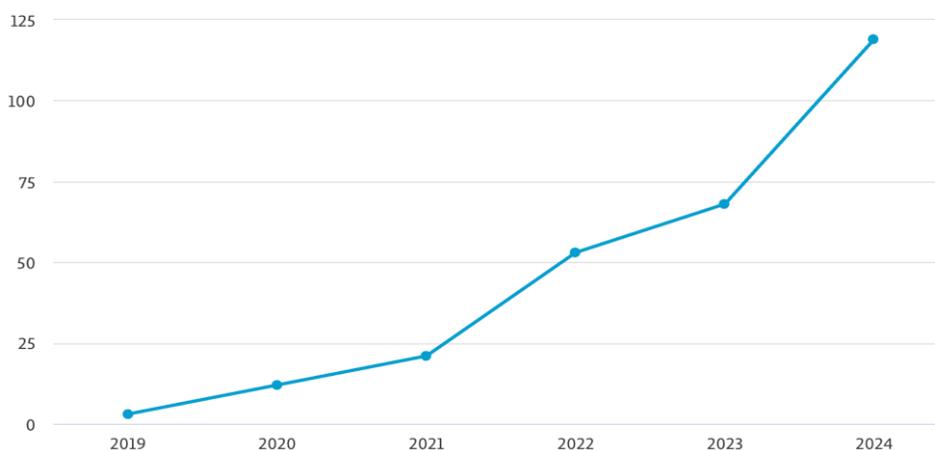


Figure 1: Research trends by year

Table 3

Research trends by year

Year	Total publication
2024	119
2023	69
2022	53
2021	21
2020	12
2019	3

Starting in 2022, there was a marked increase in research activity, with the number of publications rising to 53 in 2022 and 68 in 2023. This surge indicates a transition from exploratory studies to more mature academic inquiries. Several factors contributed to this growth, including advancements in live streaming technologies, increasing consumer engagement with real-time digital commerce, and growing academic interest in influencer marketing, virtual streamers, and platform algorithms within the e-commerce ecosystem.

The year 2024 marked a peak in publication activity, with a total of 119 articles—nearly double that of 2023. This explosive growth reflects the mainstreaming of ECLS as both a business strategy and a research domain. The rising academic interest signals a diversification of research themes, such as consumer trust, immersive experiences, cross-platform integration, and the effectiveness of virtual influencers. This upward trend suggests promising opportunities for interdisciplinary research and indicates that ECLS will remain a dynamic and evolving topic in the coming years.

Subject Areas Distribution

According to statistical results from the Scopus database, research on ECLS is primarily concentrated in two core fields: Computer Science (147 publications) and Business, Management and Accounting (87 publications). The former reflects the field's strong reliance on technological foundations such as artificial intelligence, recommendation systems, platform architecture, and big data processing. The latter focuses on managerial perspectives, including business models, marketing strategies, and consumer behavior. This dual dominance highlights the interdisciplinary nature of ECLS, which is both technology-driven and market-oriented.

Documents by subject area

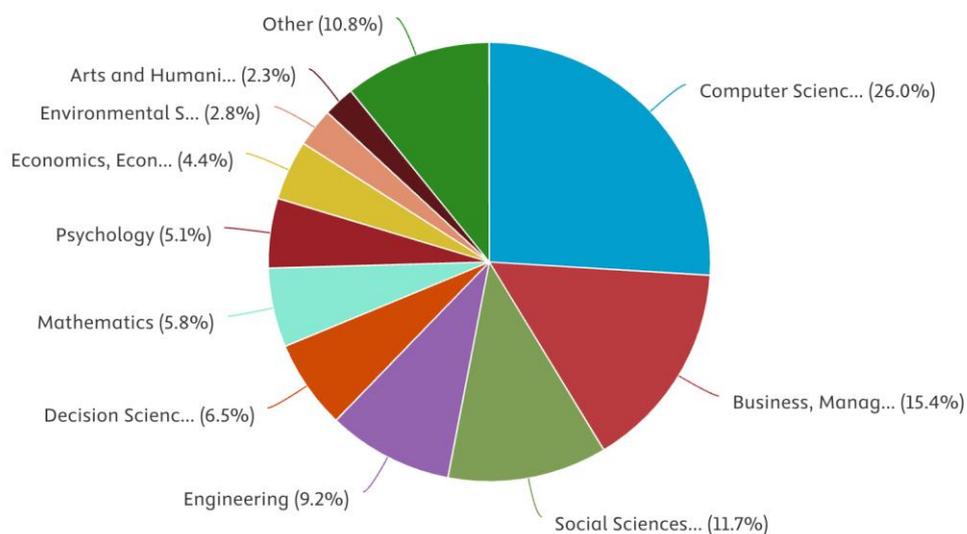


Figure 2. The Distribution of Disciplines

Table 4

The Distribution of Disciplines

Subject area	Number of articles
Computer Science	147
Business, Management and Accounting	87
Social Sciences	66
Engineering	52
Decision Sciences	37
Mathematics	33
Psychology	29
Economics, Econometrics and Finance	25
Environmental Science	16
Arts and Humanities	13

Other fields such as Engineering (52 publications), Decision Sciences (37 publications), and Mathematics (33 publications) also play significant roles, emphasizing the need for research on system modeling, algorithm optimization, and operational decision-making within the ECLS environment. These studies often aim to optimize the live streaming process, improve conversion rates, or develop intelligent decision support systems, thereby providing more efficient operational mechanisms for platforms and merchants.

Notably, disciplines such as Psychology (29 publications), Economics, Econometrics and Finance (25 publications), and Social Sciences (66 publications) are increasingly engaging with the topic, reflecting sustained interest in consumer experience, psychological mechanisms, and social interaction. Meanwhile, the presence of Arts and Humanities (13 publications) indicates that researchers are beginning to explore deeper cultural, communicative, and identity-related dimensions, including virtual streamers, emotional connections, and media

representation. This trend is driving the study of ECLS toward greater diversity and humanistic depth.

Country and Institution Contributions

China holds an absolute dominant position in the field of ECLS research, with a total of 205 publications, accounting for 67.5% of all studies. This leading position reflects China's early-mover advantage in both the practice and academic study of ECLS. It also highlights the sector's rapid growth within China's domestic industry, especially driven by platforms such as Taobao Live and Douyin E-commerce. In contrast, publication volumes from other countries are significantly lower, indicating a strong regional concentration in research.

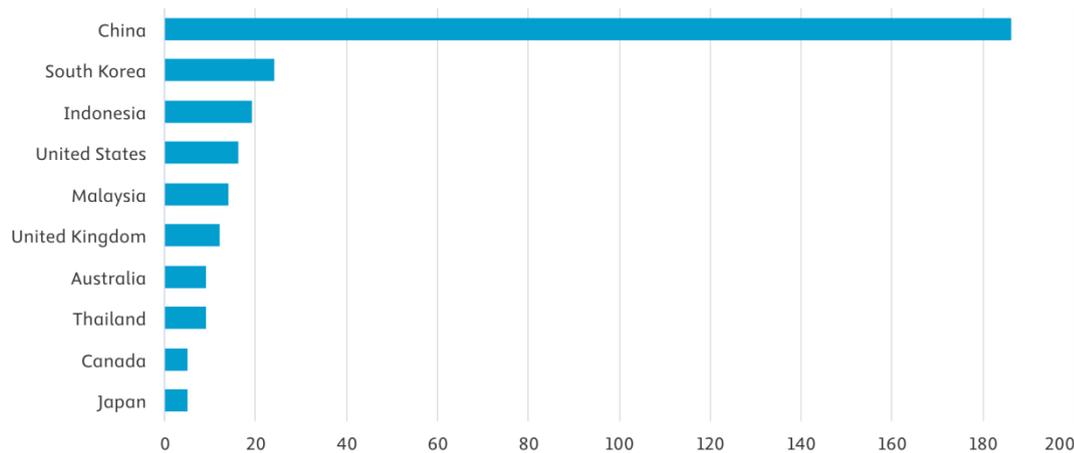


Figure 3. Number of publications by country

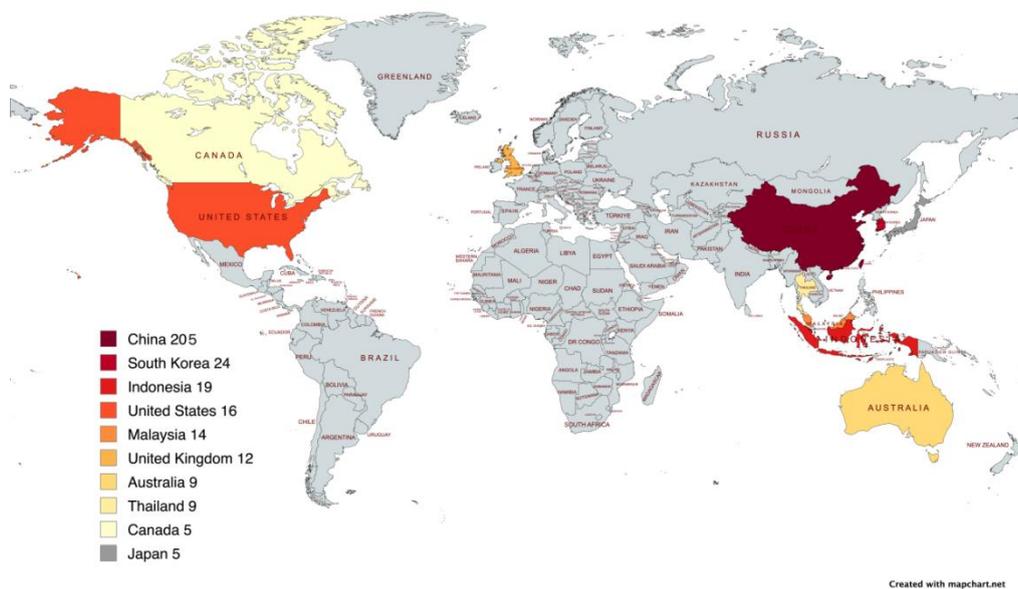


Figure 4. Map of national publications

Following China are South Korea (24 publications), Indonesia (19), the United States (16), and Malaysia (14). Although their publication numbers are relatively modest, these countries show a certain level of research activity. In particular, South Korea and Indonesia have gradually integrated live streaming functions into their e-commerce platforms, likely stimulating related academic interest.

The United States, as a global leader in the digital economy, has also begun to explore ECLS from perspectives such as consumer behavior and platform algorithms, demonstrating potential in theoretical development and cross-national platform studies. The United Kingdom, Australia, Thailand, Canada, and Japan each have fewer than 12 publications, but their studies often focus on theoretical dimensions such as cross-cultural communication, user behavior models, and technology acceptance. While limited in quantity, these contributions offer strong international perspectives and theoretical depth, adding valuable diversity to the field.

Overall, ECLS research exhibits a global development pattern centered on China, extending through East and Southeast Asia, with growing participation from Western academia.

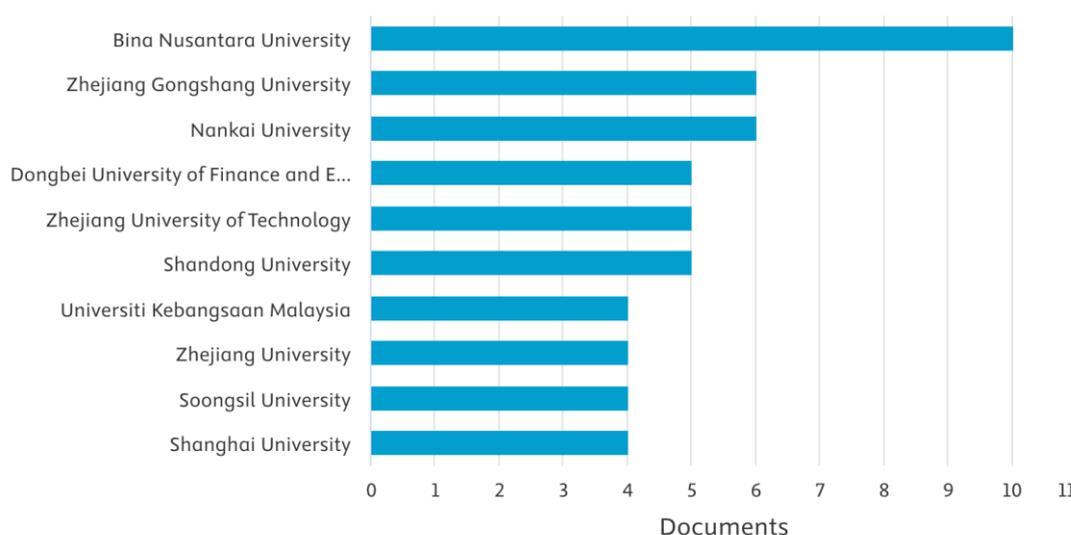


Figure 5. Number of publications by institution

In addition to these two institutions, several other Chinese universities have shown consistent research output, including Dongbei University of Finance and Economics, Zhejiang University of Technology, and Shandong University (each with 5 articles), as well as Zhejiang University and Shanghai University (each with 4 articles). These universities are known for strengths in economics, management, and information engineering, suggesting that ECLS, as an interdisciplinary subject, has been incorporated into diverse academic research agendas, forming an extensive university research network.

Although China dominates in terms of contributing institutions, other Asian countries are gradually gaining influence. For instance, Universiti Kebangsaan Malaysia (Malaysia) and Soongsil University (South Korea) have each published 4 articles, reflecting the growing international attention to ECLS—particularly in Southeast and Northeast Asian markets. As live streaming technologies and platforms continue to expand globally, international collaborative research is expected to further enhance the theoretical breadth and comparative perspective of this emerging field.

Journal Distribution and Source Titles

In terms of publication distribution, *Frontiers in Psychology* ranks first with 13 articles, followed by the *ACM International Conference Proceeding Series* (11 articles) and the *Journal of Retailing and Consumer Services* (9 articles). This indicates that ECLS research continues to receive significant attention in the fields of psychology and consumer behavior, while also drawing interest from computer science and information technology communities. The presence of several conference proceedings (e.g., *ICEB* and *LNCS*) in the top ten highlights the field's rapid development and researchers' tendency to share cutting-edge findings through conferences.

Table 5
Top 10 Journals

Journal name	Number of posts	Journal type	Impact factor (JIF2024-2025)	Journal grade(JCR Partition)
Frontiers in Psychology	13	SSCI (journal)	2.9	Q1
ACM International Conference Proceeding Series	11	Conference Proceedings (without IF)	none	none
Journal of Retailing and Consumer Services	9	SSCI (journal)	13.1	Q1
Sustainability (Switzerland)	8	SCIE (Journal)	3.3	Q3
Journal of Theoretical and Applied Electronic Commerce Research	6	SSCI (journal)	4.6	Q2
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture	6	Conference Proceedings (without IF)	none	none

Notes in Bioinformatics)				
Proceedings of the International Conference on Electronic Business (ICEB)	6	Conference Proceedings (without IF)	none	none
PLoS ONE	5	SCIE (Journal)	2.6	Q2
Applied Mathematics and Nonlinear Sciences	5	SCOPUS journals (without JIF)	none	none
Asia Pacific Journal of Marketing and Logistics	5	SSCI (journal)	5.1	Q1

From the perspective of journal type and ranking, six of the top ten publication outlets are SSCI or SCIE-indexed journals, reflecting strong academic recognition. Notable examples include Journal of Retailing and Consumer Services (JIF 13.1, Q1) and Asia Pacific Journal of Marketing and Logistics (JIF 5.1, Q1), which demonstrate the field's growing presence in high-impact business, marketing, and social science journals. Additionally, the inclusion of Sustainability and PLoS ONE suggests the wide dissemination of research in interdisciplinary and open-access platforms.

It is also worth noting that some conference proceedings and Scopus-indexed journals (such as LNCS, ICEB, and Applied Mathematics and Nonlinear Sciences)—though not indexed in JCR and lacking official impact factors—have played a crucial role in facilitating early-stage exploration and methodological development in the field. This highlights the diversity of research dissemination paths in ECLS, encompassing both in-depth studies in core SSCI journals and rapid responses to emerging technologies, models, and cases through conference publications. Future research should place greater emphasis on publishing in high-quality journals while also promoting the transition of conference outputs into top-tier academic outlets.

Author and Citation Analysis

Most Productive Authors

C.Cao and Y. Ma are the most prolific authors in the field of ECLS, each having published 4 articles (1.325%). They are followed by J. Cao, Z. Guan, Y. Guo, F. Hou, B. Li, R. Li, X. Li, and D. Liu, each with 3 publications, accounting for 0.993% respectively (see Fig.6)

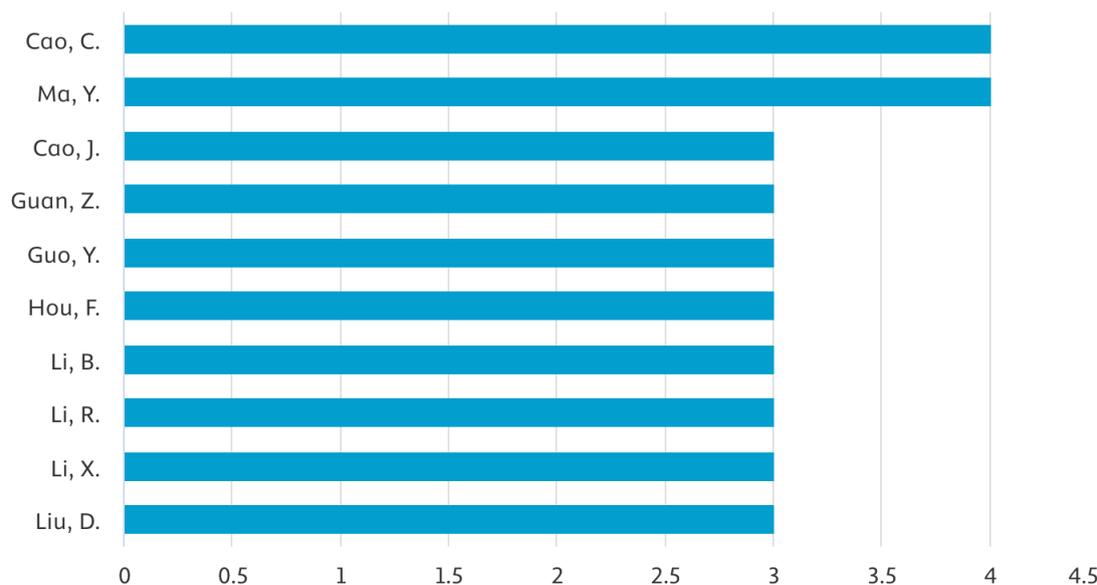


Figure 6. Top 10 most prolific Authors

Co-authorship Network

From the author collaboration network, it is evident that the field of ECLS research has not yet formed a clearly defined collaborative network. Most authors publish individually or in small groups, with relatively loose connections between nodes, indicating the presence of “isolated islands.” This suggests that academic collaboration in this field is still at an early stage.

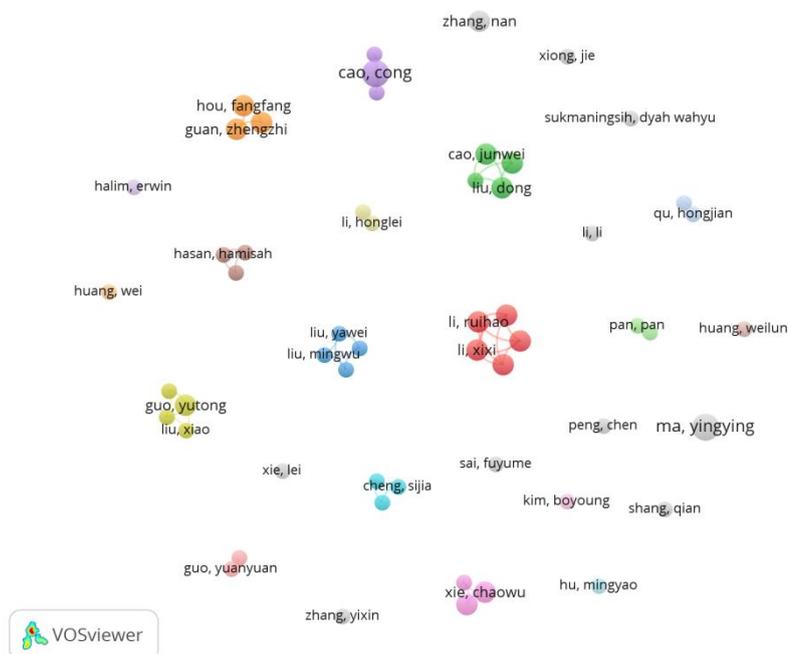


Figure 7. Co-authorship Network

Nevertheless, several small clusters with closer collaboration can be identified. For example, the red cluster, represented by scholars such as Li Ruihao and Li Xixi, demonstrates

a certain frequency of cooperation, indicating that some researchers have already established stable research partnerships. In addition, the blue and green clusters also reflect relatively consistent patterns of collaboration.

Overall, future research in this area would benefit from enhanced cross-institutional and international collaboration to form a more cohesive academic network. This would help advance the systematic and global development of ECLS research.

The collaboration network reveals that scholar partnerships in this field remain relatively fragmented, with most researchers working independently or within small teams, and limited cross-institutional or cross-national cooperation. This may be attributed to the field's rapid development in recent years, which has yet to accumulate a solid foundation for international academic exchange. Future efforts should focus on strengthening interregional and interinstitutional collaboration mechanisms to build a more connected and efficient scholarly network, thereby promoting deeper and more integrated development in this emerging research area.

Highly Cited Publications

Table 6

Highly cited articles in literature samples

Cited	Authors	Title	Year
365	Hu, M., Chaudhry, S.S.	Enhancing consumer engagement in e-commerce live streaming via relational bonds	2020
232	Guo, Y., Zhang, K., Wang, C.	Way to success: Understanding top streamer's popularity and influence from the perspective of source characteristics	2022
198	Ma, Y.	To shop or not: Understanding Chinese consumers' live-stream shopping intentions from the perspectives of uses and gratifications, perceived network size, perceptions of digital celebrities, and shopping orientations	2021
154	Zhang, M., Sun, L., Qin, F., Wang, G.A.	E-service quality on live streaming platforms: swift relationship perspective	2020
152	Xie, C., Yu, J., Zhang, J., Huang, S.S.	Tourism e-commerce live streaming: Identifying and testing a value-based marketing framework from the live streamer perspective	2022

118	Chen, H., Zhang, S., Gao, W., Xu, Y., Shao, B.	How do interpersonal interaction factors affect buyers' purchase intention in live stream shopping? The mediating effects of swift relationship	2022
109	Guo, J., Li, Y., Xu, Y., Zeng, K.	How Live Streaming Features Impact Consumers' Purchase Intention in the Context of Cross-Border E-Commerce? A Research Based on SOR Theory	2021
108	Jeong, H., Yi, Y., Kim, D.	AN INNOVATIVE E-COMMERCE PLATFORM INCORPORATING METAVERSE TO LIVE COMMERCE	2022
99	Lin, S.-C., Tseng, H.-T., Shirazi, F., Hajli, N., Tsai, P.-T.	Exploring factors influencing impulse buying in live streaming shopping: a stimulus-organism-response (SOR) perspective	2023
80	Ma, Y.	Elucidating determinants of customer satisfaction with live-stream shopping: An extension of the information systems success model	2021

The citation analysis of the top 10 most cited authors in ECLS research reveals that Hu and Chaudhry's (2020) work titled "Enhancing consumer engagement in ECLS via relational bonds" leads the field with 362 citations. This foundational study underscores the importance of relational bonds—such as emotional connection and trust—in enhancing consumer engagement, laying a strong theoretical and empirical basis for subsequent investigations. Its early publication date (2020) and high relevance to the core mechanism of live commerce. Following closely are studies by Guo et al. (2022) and Ma (2021). Guo et al.'s research explores how live streaming features impact consumers' purchase intentions in the context of cross-border e-commerce, based on the Stimulus-Organism-Response (SOR) theory. Ma's study elucidates the determinants of customer satisfaction with live-stream shopping, extending the information systems success model. These works not only reflect theoretical richness but also align closely with the practical landscape of live-streaming in China, helping explain their high impact.

Notably, several studies among the top 10 apply or extend established theories such as swift relationship (Zhang et al., 2020; Chen et al., 2022), SOR theory (Guo et al., 2021; Lin et al., 2023), and the Information Systems Success Model (Ma, 2021). These theoretical frameworks serve as key lenses to understand user behavior, satisfaction, and impulse buying in live-streaming contexts. The recurring use of these models suggests a trend toward theory-driven research, while the presence of newer themes like metaverse integration (Jeong et al., 2022) and cross-border e-commerce (Guo et al., 2021) indicates that the field is diversifying and evolving alongside technological and market developments.

Thematic Clusters and Emerging Topics

Analysis Keyword Co-Occurrence Analysis

Keyword co-occurrence analysis is essentially a semantic measurement of the keywords used in scientific literature and serves as a method for identifying commonalities in research content (Corvo et al., 2021). Figure 12 presents the results of the author keyword co-occurrence network analysis. Based on 277 selected articles related to ECLS, a co-word network was generated using VOSviewer. The minimum threshold for keyword occurrence was set at 4, resulting in 39 valid keywords. These keywords were grouped into 8 distinct clusters, each representing a thematic focus within the field.

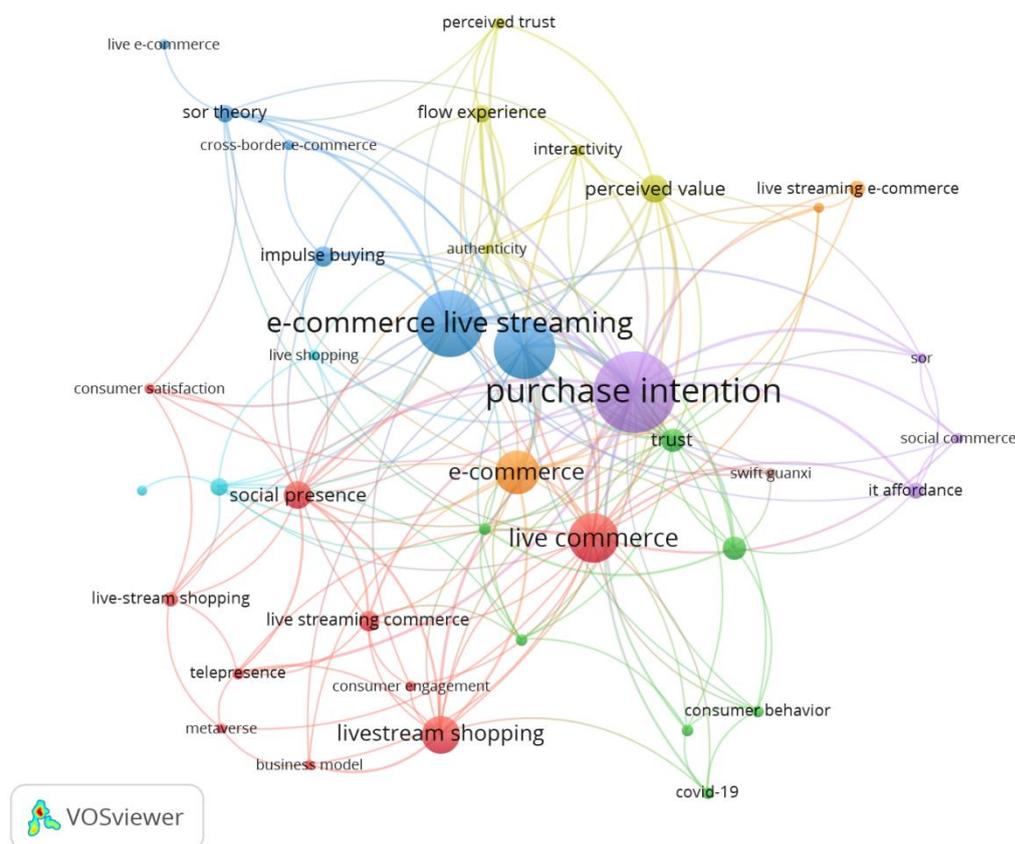


Figure 8. Keywords Co-Occurrence Network

Sorted by frequency, the most prominent keywords in the field are “purchase intention” (56 occurrences), “e-commerce live streaming” (43), and “live streaming” (38). These keywords reflect the core focus areas of the field, all of which are closely interconnected, highlighting researchers’ primary interest in understanding consumer behavior and motivations within live streaming contexts. Their high total link strengths (e.g., “purchase intention” at 94) further emphasize their integrative role across various research threads.

Each cluster centers around a specific thematic focus. The red cluster includes terms such as live stream shopping, consumer engagement, telepresence, and social presence, reflecting studies on immersive consumer experiences and social dynamics in live shopping environments. This cluster emphasizes how psychological presence, parasocial interaction,

and real-time participation mechanisms influence consumer behavior and brand loyalty, especially under the influence of telepresence technologies and the metaverse.

The green cluster features keywords like live commerce, consumer behavior, purchase intention, and trust, highlighting a research focus based on consumer decision-making frameworks. Studies in this cluster often draw on the S-O-R (Stimulus–Organism–Response) model to explore how technological features and trust factors affect consumers' cognitive and emotional responses, thereby triggering purchasing behavior in live commerce scenarios.

The blue cluster comprises keywords such as ECLS, flow experience, perceived trust, and interactivity, indicating a focus on user experience, interface design, and technological affordances. Researchers in this area typically employ psychological and behavioral theories to examine how engaging interfaces and perceived social presence foster deeper flow states and influence purchase intentions.

Other clusters include emerging themes such as “influencer marketing,” “swift relationship,” and “business model innovation,” indicating a growing interdisciplinary interest that connects marketing, information systems, and digital consumer psychology. Notably, high-impact keywords like “purchase intention,” “trust,” and “streamer” occupy central positions in the network, confirming their pivotal role in shaping the research agenda of ECLS.

In terms of scientific influence, certain keywords have higher average normalized citation scores, such as “streamer” (2.94), “swift relationship” (2.83), and “trust” (2.67), indicating that these topics have garnered greater academic attention and impact. Meanwhile, keywords like “COVID-19” and “social commerce,” although moderate in frequency, are closely tied to the contemporary research context.

In summary, the co-occurrence network not only reveals the structural dimensions of current literature but also identifies the thematic intersections between consumer behavior, technological affordances, and marketing strategies. These insights can guide future research, particularly in underexplored areas such as metaverse-driven commerce or cross-cultural livestreaming practices.

Discussion: From Foundational Concepts to Strategic Focus

To explore the thematic evolution of ECLS research, this study utilized VOSviewer to conduct an annual keyword co-occurrence analysis. Based on clustering and temporal patterns from 2019 to 2024, the field demonstrates a clear trajectory of topic development and increasing thematic refinement.

In the early stage (2019–2020), the field was dominated by foundational concepts such as e-commerce, e-commerce live streaming, and live streaming. Two distinct subfields began to emerge—one focusing on general e-commerce integration and the other treating live streaming as an independent media format. Between 2020 and 2021, the emergence of terms like live commerce and live stream shopping indicated a subtle shift, reflecting growing academic interest in monetization mechanisms and consumer-facing platform functionalities.

From 2021 to 2023, research themes became more nuanced at psychological and behavioral levels. Clusters emphasized purchase intention, flow experience, impulse buying,

perceived value, and interactivity. Notably, the appearance of terms such as grounded theory and fsQCA pointed to a diversification of methodologies. The rise of keywords like trust, telepresence, and tourism e-commerce suggested an increasing emphasis on vertical applications and interdisciplinary integration. This period marked the field's maturation, with scholars delving into internal psychological mechanisms and user experience.

In the most recent stage (2023–2024), the thematic landscape has become more fragmented yet more refined, with multiple research streams coexisting. Current dominant clusters include customer trust, consumer satisfaction, cross-border e-commerce, and influencer marketing, signaling a shift toward strategic marketing, platform governance, and internationalization. Emerging terms such as TikTok, streamers, and digital humans (virtual idols) reflect the influence of contemporary platforms and technologies on consumer engagement. High-weight keywords like purchase intention, live streaming, and trust remain foundational, while growing interest in SOR theory and perceived risk indicates the strengthening of theoretical underpinnings.

In summary, ECLS is an emerging yet rapidly evolving research field, exhibiting a trajectory from conceptual framing to theoretical refinement, and from macro-level platform analysis to micro-level user experience. Future research is likely to focus more on the collaborative mechanisms within platform ecosystems, the dynamic evolution of consumer psychology, and the deep integration of AI-driven recommendations, virtual streamers, and immersive experiences. Additionally, cross-border e-commerce, short video platforms (such as TikTok), and their global expansion effects will further push the research agenda toward internationalization and multi-context adaptation. Theoretically, with the widespread application and expansion of models such as S-O-R and Uses & Gratifications, the field is progressively building a more robust theoretical foundation, laying the groundwork for future exploration of the interactions among user behavior, platform strategy, and social impact.

Conclusions

This study offers a comprehensive bibliometric analysis of e-commerce live streaming (ECLS) research from 2019 to 2024 using Scopus data and VOSviewer visualizations. By examining 277 publications, it maps the intellectual landscape of this rapidly evolving domain through an investigation of publication trends, disciplinary distribution, geographic and institutional contributions, core journals, author networks, citation impact, and keyword co-occurrence clustering.

The findings reveal a significant upward trajectory in scholarly attention toward ECLS, with publication output peaking in 2024. China leads in both academic output and institutional participation, indicating its pioneering role in the practice and study of ECLS. The dual dominance of computer science and business disciplines reflects the field's interdisciplinary nature—technologically driven yet behaviorally grounded. Key themes such as consumer engagement, trust, purchase intention, and technological affordances (e.g., interactivity, telepresence) have emerged as central focal points, often anchored by established theories such as S-O-R and swift relationship.

Looking forward, the research frontier of ECLS is moving toward strategic marketing, platform governance, and cross-border commerce, with emerging interest in AI-driven

personalization, virtual influencers, and immersive experience design. The evolving role of platforms like TikTok and the integration of the metaverse underscore the need for more cross-context, comparative, and interdisciplinary studies. This bibliometric review not only clarifies the current state of knowledge but also provides a roadmap for future research directions in this dynamic and impactful field.

By systematically mapping the evolution of ECLS research, this study contributes to clarifying how the field has matured from fragmented explorations into a coherent academic domain. It enriches the theoretical understanding of digital consumer behavior and provides a knowledge base for future empirical and conceptual advancements. Overall, this bibliometric review not only summarizes existing research patterns but also highlights the strategic opportunities and theoretical pathways for the continued development of ECLS scholarship.

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